

# Dynamic Routing for Delivery of E-shopping Items

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**Abstract** - Now-a-days the life style of the people is different. People feel uncomfortable and time overwhelming for going thronged markets. So, E-Shopping is a boon as it saves lot of time. Online looking may be a method whereby customers directly get merchandise, services etc. from a merchandiser while not Associate in Nursing go between services over the net. Shoppers can visit web stores from the comfort of their house and shop as by sitting in front of the computer. Online stores square measure sometimes on the market twenty four hours daily and plenty of customers have net access each at work and reception. So it is very convenient for them to shop Online. But it is very difficult to manage which delivery person will deliver the goods on the basis of its location and warehouse in which this item is available. The current system does not use any algorithm to provide an automated system that dynamically assigns a delivery person to the system. The delivery person assignment task was done static, i.e. manually but the vision is to automate this process by using dynamic routing algorithm such as OSPF. Open shortest Path First algorithm will be used to assign delivery person for delivery the online bought item.

**Key Words:** Online shopping, Open Shortest Path First (OSPF), Dynamic Route, Assign Delivery Person, view shopping details, Search product, purchase product, provides route on Google Maps.

## 1. INTRODUCTION

Online searching project could be net application that is enforced in Java platform. Online searching could be a type of electronic commerce that permits customers to directly purchase merchandise or services from a render over the net employing an applications program. The Online shopping Consumer need to register their Profile to take their name, address, contact, and their payments details to continue the shopping Online. Multiple customers are login/register the online shopping.to the same/different Multiple addresses.

Android is an operating system as well as a programming platform for smart phones and other mobile devices. It has been developed by Google it can run on different devices produced by various manufacturers. It includes a software development kit for including the original code and assembling the software modules to create applications for the Android users. It also provides a marketplace for distributing the developed apps. Altogether, it represents an entire ecosystem for mobile based apps

The "Routing App" is an Android application working on Route management to the delivery person are delivered the product to the consumer doors.

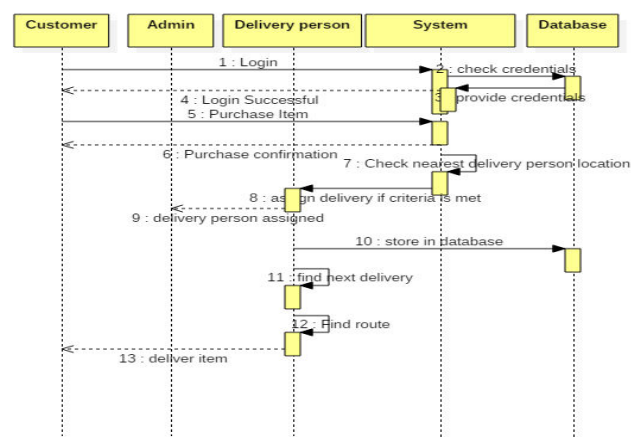


Fig -1: Sequence Diagram Working Flow

OSPF Algorithm to Automatic delivery person are assigned to the shipping product. The nearest delivery person are automatic assigned the system. The Routing App their shipping details and work out details must be saved to the system. The "Google Map" are open to show the locations to the customers easier to make the deliver the product to customer's doors.

The Google map are Automatic Dynamic Route provide on Delivery person to fastest as possible customer product are delivered to the time.

## 2. LITERATURE SURVEY

### 2.1 Change in Location

Parcel service providers achieve very high first-time delivery rates if parcels are left on alternative locations, like as neighbors or service-points/drop-off-points. Delivering to neighbors increases the delivery efficiency with 25%. Givers et al. (2011) [4]

gave an overview of the possible deliveries at different locations. Unattended deliveries neighbors-deliveries, and deliveries at pick-up points or collection points. Changing attended deliveries where the recipient has to be presented in unattended deliveries may increase the delivery potency. Unattended reception permits a bigger in operation potency while not influencing the service level .(Punakivi et al.; 2001) [6]

However, this idea is barely applicable for product which will be safely deposited, e.g. In customers mailbox (Agatz et al., 2008c). [7]

A client that invests during a reception box gains total independence of the delivery time windows, and supply service suppliers (Punakivi et al., 2001). [6]

Using these boxes, a home delivery service may be offered at a reasonably low value (Punakivi & Tanskanen, 2002). [6]

The boxes eliminate the redelivery costs when customers are not at home at the moment of delivery. However, security stays an important issue for those boxes (Gevaers et al., 2009). [4]

Having a delivery to-door, whereas the receiver isn't gift, is additionally doable once the parcel is delivered to the neighbors (Weltevreden & Rotem-mindali, 2009). This option could be very successful in situations that the attended home delivery fails. According to results from surveys, it appeared that 84% of the online shoppers would be happy when a neighbor receives their delivery on their behalf (IMRG, 2008). [9]

For bridging the last mile, the use of pickup-points or drop-off points is also a good solution to reduce rework. Physical in-store pick-up points square measure common alternatives for client home delivery (Agatz et al., 2006). [7]

The conception of assortment and delivery points (CDP's) has been developed okay. The option to bring (failed) deliveries to local collection/delivery points is described as an emerging option to tackle the problem of failing home deliveries. Several advantages of this pick-up/collection points are: The consumer will collect their failing deliveries domestically instead of having to gather them from a depot or terminal, what can be more away. Higher consumer satisfaction. A secure delivery is Reducing wasted mileage as a result of re deliveries maintained (McLeod et al., 2006). [10]

The environmental impacts could be lowed, because of less additional vehicle trips are necessary for the delivered parcel. On the other hand, this will not always be the case because trips of consumers to pick up their parcel. (Song, L., Cherrett, T.J., McLeod, F.N. and Guan, W. (2009)) [8]

will also have environmental impacts. After delivery at the CDP, the customer is mostly informed about this delivery, and could collect the parcels with proof of identity. (McLeod et al., 2006) [10]

Using the CDP-concept helps to extend the service level. The main advantage is that 100% of the parcels are delivered. This method is not described as a solution for all cases, because the distance travelled to the CDP could result in more costs than are delivery of that parcel. From a case description in it was shown that the failure rate should be around 20% to be more efficient when using CDPs. (Du, T. C., Li, E. Y., & Chou, D. (2005)) [1]

## 2.2 Change in route

Changes in route are strongly related to changes in time. The timing of offered slots impacts the route efficiency (Agatz et al., 2013). [7]

When the route is changed, but the delivery time is kept the same at an 'unsuccessful' address, it will be unsuccessful again. The main difference is that a change in route could optimize the delivery efficiency. About vehicle routing issues in B2C-deliveries plenty of literature is obtainable from the research (Goffau, W. de, (2014a, Public)). [11]

Dynamic Routing in B2C-deliveries is troublesome, because the orders are changing in volume, unpredictable and dynamically changing. Algorithms are often used, to design the best route, static or dynamic. (Du et al.; 2005) [1]

Dynamic Vehicle Routing (DVR) allows vehicles to update services based on renewed information: the existing vehicle routing algorithms are often used for repeated and planned orders (Du et al.; 2005). [1]

Also, time dependent data (about traffic jams for example), ought to be thought-about by supplying service suppliers (Xu, J., Jiang, L. & Wang, S. (2014)). [3]

Due to these last minute changes, it is difficult to schedule and plan the last mile into detail. Smaller timeframes are needed resulting in more uncertainty due to planning difficulties and traffic uncertainties. (Meints, P. (2013)) [2]

The average travelled distance per stop / per parcel is influenced by the time-window used. Smaller time-windows result in more miles per consumer. Also, rerouting is Associate in Nursing possibility, once it's doable for shoppers to vary the destination of their parcel throughout the delivery day (Gevaers et al., 2011). [4]

The use of communication tools and dynamic routing tools is unavoidable. It can be concluded that most research about routing in the last mile is focusing on efficient routing, but the dynamic routing based on efficient deliveries is a new interesting trend (McKinnon, A.C. & Tallam, D., (2003)). [5]

## 2.3 Online Shopping Store

The First Section of this folder describes what's concerned in commerce on-line your Websites. So as to method a web sales transactions 2 things area unit required (Xu, J., Jiang, L. & Wang, S. (2014)). [3]

### 2.3.1 Searching Cart

Shopping cart code keep track of what the user selects to shop for from the web site before continuing to the "checkout". An online go-cart consists of 3 components. value (Punakivi & Tanskanen, 2002). [6]

Product catalogue:-

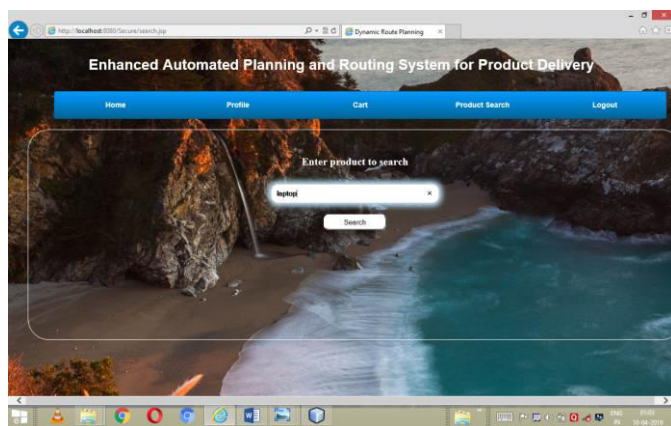


Fig -2: Online Product Search

The product catalogue is formed from all the data required to gift any product to the client and to finish a sales group action on-line. Data to be enclosed within the product information typically includes the worth, number (SKU), image or different transmission data, product choices or selections. (McLeod et al., 2006) [10]

A searching list (i.e. list of designated products) permits users to trace the things they require to get. A go-cart image is mostly wont to show what things the patron has designated for purchase. So as for the go-cart to operate properly the user's laptop should be set to permit "cookies".

The checkout system permits customers to pick out product by clicking Associate in nursing "add things to cart" button then permits them to get hold of these product.

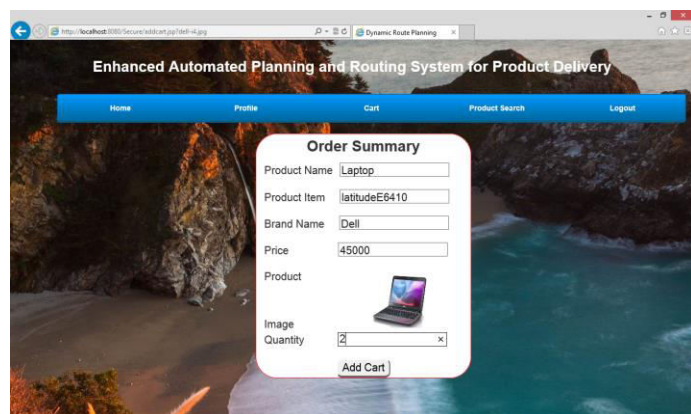


Fig -3: Online Purchase Product & add to Cart

### 2.3.2 Payment process

There are a unit payment process choices Internet Merchants Account An internet Merchants account is Associate in nursing account issued by an institution that allows a business to simply accept MasterCard payments on-line. Businesses should acquire a separate web businessperson Account for every style of MasterCard they need to simply accept

How to you acquire a web business person Account?

A businessperson account could be a style of checking account that enables businesses to simply accept payments in multiple ways that, usually debit or credit cards. A

businessperson account is established below Associate in nursing agreement between Associate in Nursing acceptor and a businessperson getting bank for the settlement of payment card transactions

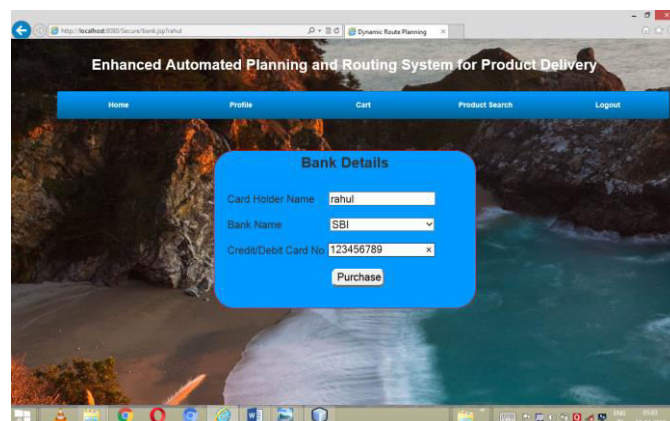


Fig -4: Online Payment Process

## 3. METHODOLOGY

The given project are Working on a Four modules

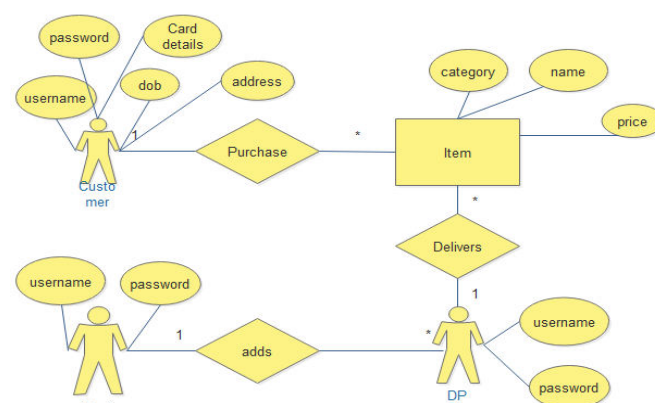


Fig -5: Working Architecture

### 3.1 Admin

Add delivery person, add items, view customer details, view shopping details, and view shipping details. The given project the admin can add items, Customer details check and also check the status of shipping the product to the customer. Delivery person location route track by the admin.

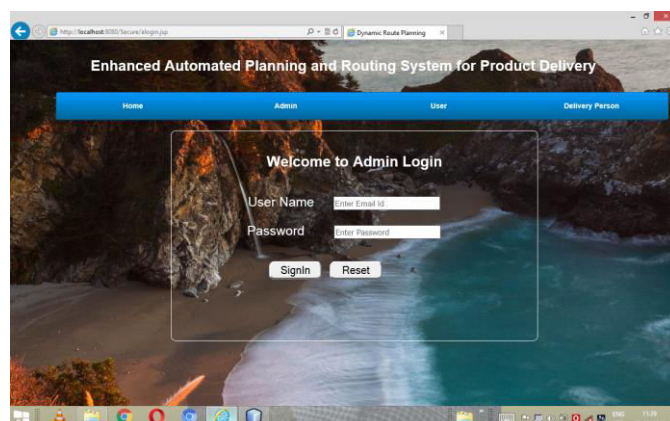


Fig -6: Admin Login



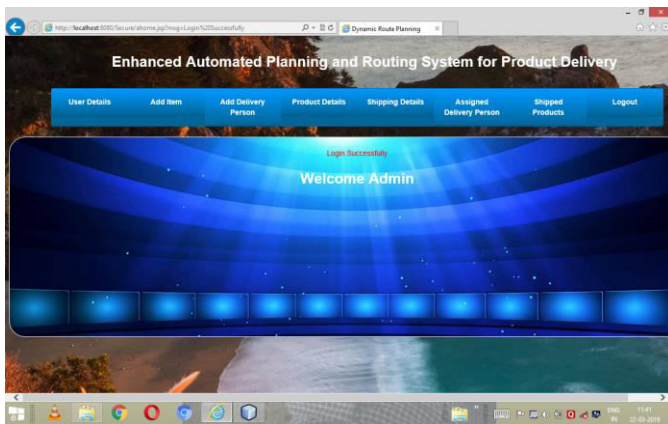


Fig -7: Admin Home Page

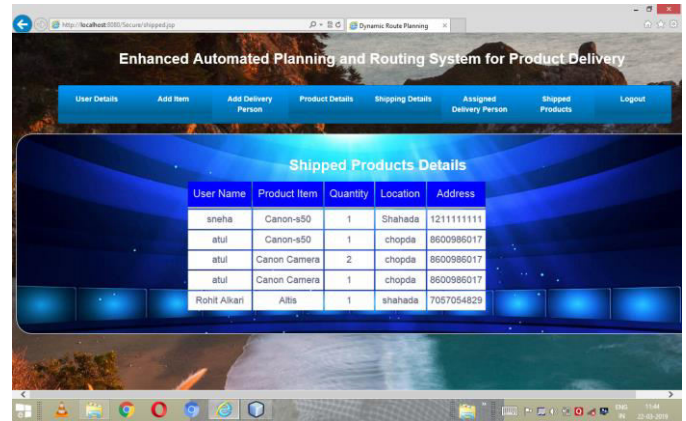


Fig -10: Shipped Product Facts

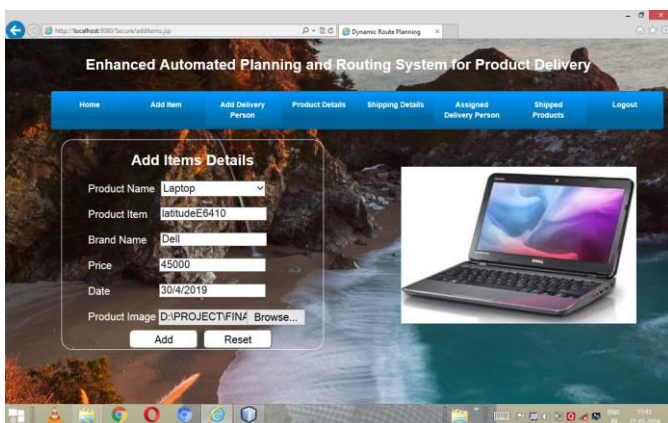


Fig -8: Admin add items

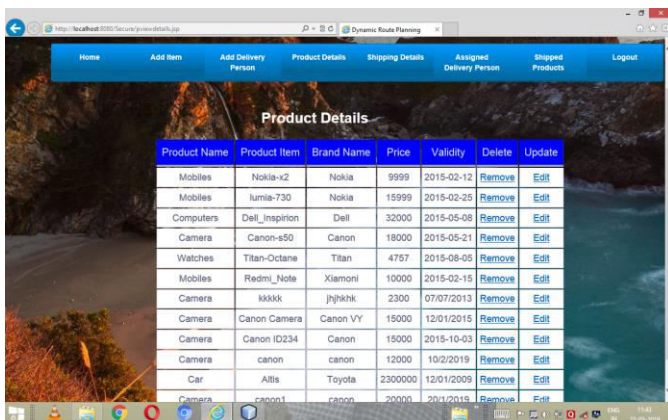


Fig -9: Online Product Specifics

## 3.2 Customer

The Customer are search item, add to cart and purchase the items and Banking options to fulfill the Requirements

## 3.3 Delivery person

The delivery person are working On an Android application is "Routing App" to make in "Android Studio" to work on an easier to deliver person. Routing app registration to their current status are uploaded to the system.

The delivery Person check Status.

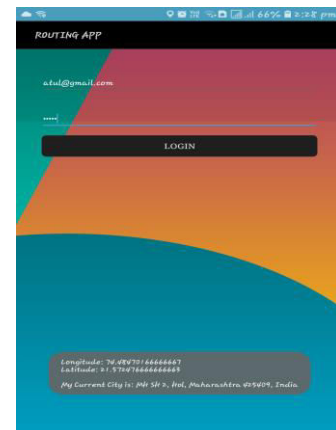
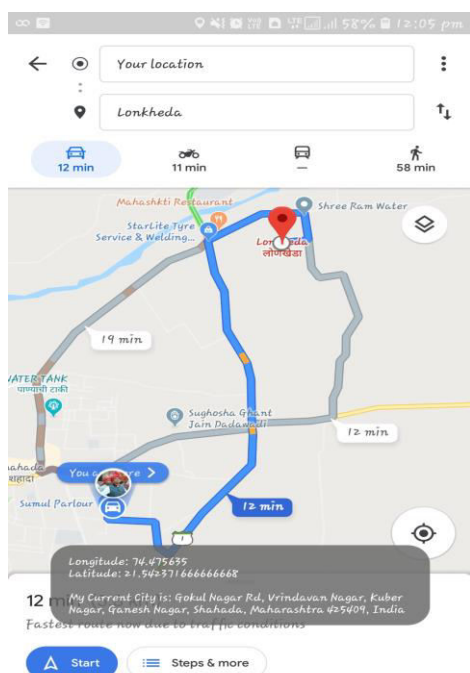


Fig -11: Delivery Person Sign in

## 3.4 Dynamic Routing

Assign delivery person, provides route on Android mobile phone.



**Fig -12: Fastest Route Navigation**

## 4. RESULTS

This Project are working Open Shortest Path First algorithm (OSPF) Successfully. Online shopping customer's product Search and purchase successfully. Automatic delivery person are Using Android App " Routing App" to deliver the product to customer and GPS location are provided to delivery person to the google maps.

## 5. CONCLUSIONS

To conclude our research we have found that it is possible to increase the delivery efficiency of parcel delivery services by applying changes in the last mile changes in location, time, route and behavior. It clearly appears that the delivery efficiency is closely related to (demographic) characteristics of an area by the application of multiple linear regression techniques to develop address intelligence out of the big data with deliveries. Based on the validation with customer contact it has proven been that it worked well in practice the delivery rates and the rework reduction potentials are well estimated for other areas. In our research a strong relationship between low first delivery rates for zip codes with high densities and high delivery rates for zip codes with low densities were found. Therefore it is very important to consider all the related costs, i.e. the cost of rework for the second/third time deliveries. Integration of the rework cost leads to completely different relationship between cost and customer density. Based on the address intelligence new concepts can be derived for area-specific solutions to increase the first time delivery.

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